

IN THE CLAIMS:

1. (currently amended) A circular pole piece included in a magnetic circuit for magnetic resonance imaging (MRI) ~~and being divided into at least two portions, that is, said circular pole piece~~ comprising a center portion including the center of said circular pole piece and a marginal portion including the margin thereof, wherein:

the permeability which said center portion made of a soft magnetic material exhibits with an external magnetic field applied thereto is higher than the permeability of said marginal portion made of a soft magnetic material.

2. (original) A circular pole piece according to Claim 1, wherein the soft magnetic materials to be made into said respective portions have different compositions.

3. (original) A circular pole piece according to Claim 1, wherein: said center portion made of a soft magnetic material has a plurality of non-directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole; and said marginal portion made of a soft magnetic material is formed with non-directional magnetic steel sheet tiles devoid of an axis of easy magnetization.

4. (original) A circular pole piece according to Claim 1, wherein: said center portion made of a soft magnetic material has a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole, and has a non-directional magnetic steel sheet tile, which is devoid of an axis of easy magnetization, layered in combination with said directional magnetic steel sheet tiles; and said marginal portion made of a soft magnetic material is formed with non-directional magnetic steel sheet tiles devoid of an axis of easy magnetization.

5. (original) A circular pole piece according to Claim 1, wherein: said center portion made of a soft magnetic material has a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole; and said marginal portion made of a soft magnetic material has a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole, and has a non-directional magnetic steel sheet tiles, which is devoid of an axis of easy magnetization, layered in combination with said directional magnetic steel sheet tiles.

6. (original) A circular pole piece according to Claim 1, wherein said center portion made of a soft magnetic material and said marginal portion made of a soft magnetic material have a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole.

7. (original) A circular pole piece according to Claim 1, wherein said center portion made of a soft magnetic material and said marginal portion made of a soft magnetic material have a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole, and have a non-directional magnetic steel sheet tile, which is devoid of an axis of easy magnetization, layered in combination with said directional magnetic steel sheet tiles.

8. (original) A circular pole piece according to Claim 1, wherein: said center portion made of a soft magnetic material and said marginal portion made of a soft magnetic material have a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole, and have a non-directional magnetic steel sheet tile, which is devoid of an axis of easy magnetization, layered in combination with said directional magnetic steel

sheet tiles; and the ratio of the non-directional magnetic steel sheet tile to the directional magnetic steel sheet tiles is higher in said marginal portion made of a soft magnetic material than in said center portion made of a soft magnetic material.

9. (original) A circular pole piece according to Claim 1, wherein: said center portion made of a soft magnetic material has a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole; and said marginal portion made of a soft magnetic material is formed with ferrite tiles.

10. (original) A circular pole piece according to Claim 1, wherein: said center portion made of a soft magnetic material has a plurality of directional magnetic steel sheet tiles layered with the directions of the axes of easy magnetization thereof varied so that the tiles will exhibit a non-directional property as a whole, and has a non-directional magnetic steel sheet tile, which is devoid of an axis of easy magnetization, layered in combination with said directional magnetic steel sheet tiles; and said marginal portion made of a soft magnetic material is formed with ferrite tiles.

11. (original) A circular pole piece according to Claim 1, wherein said center portion made of a soft magnetic material is formed with amorphous soft magnetic material tiles, and said marginal portion made of a soft magnetic material is formed with non-directional magnetic steel sheet tiles devoid of an axis of easy magnetization.

12. (original) A circular pole piece according to Claim 1, wherein said center portion made of a soft magnetic material is formed with Parmalloy tiles, and said marginal portion made of a soft magnetic material is formed with non-directional magnetic steel sheet tiles devoid of an axis of easy magnetization.

13. (original) A circular pole piece according to Claim 1, wherein said center portion made of a soft magnetic material is formed with Parmalloy tiles, and said marginal portion made of a soft magnetic material is formed with ferrite tiles.

14. (currently amended) An MRI system ~~including a circular pole piece of Claim 1~~, comprising a circular pole piece comprising a center portion made of a first soft magnetic material and a marginal portion made of a second soft magnetic material, said marginal portion circumscribing said center portion, wherein the permeability which said center portion exhibits when an external magnetic field is applied thereto is higher than the permeability of said marginal portion when the external magnetic field is applied thereto.